



Appraisal

Critically Appraised Papers

Exercise classes supervised by a physiotherapist may be better at restoring function after frozen shoulder than individual physiotherapy

Synopsis

Summary of: Russell S, Jariwala A, Conlon R, Selfe J, Richards J, Walton M. A blinded, randomized controlled trial assessing conservative management strategies for frozen shoulder. *J Shoulder Elbow Surg.* 2014;23:500-507.

Question: Does one type of physiotherapy intervention improve shoulder function in people with frozen shoulder more than other types of physiotherapy interventions? **Design:** Randomised controlled trial with concealed allocation and blinded outcome assessment. **Setting:** Physiotherapy outpatient clinics in the United Kingdom. **Participants:** Inclusion criteria were: people with a diagnosis of frozen shoulder (insidious onset of pain and stiffness with reduction of range of motion of at least 50% of external rotation, and without underlying radiologic abnormality) and symptoms present for at least 3 months. Exclusion criteria were: history of trauma to the shoulder, shoulder inflammatory joint disease and cervical spine disease. Randomisation of 75 participants allocated 25 to an exercise group, 24 to an individual physiotherapy, and 26 to a home exercise program. **Interventions:** All groups received instruction on shoulder exercises and an information booklet. In addition, the exercise group participated in a twice-weekly physiotherapist-led exercise group class for 6 weeks; participants performed a 50-minute exercise circuit of 12 stations of range of motion exercises for the shoulder and thoracic spine. The individual physiotherapy group received two individual sessions each week for 6 weeks from a musculoskeletal physiotherapist. Individual treatment could include manual techniques, massage, stretching and heat. **Outcome measures:** The primary outcome was

the Constant Score measured at 6 weeks, 6 months and 12 months, with a score of 100 denoting the highest level of functioning. Secondary outcome measures included the Oxford Shoulder Score, the Hospital Anxiety and Disability Scale and shoulder range of motion. **Results:** A total of 61 participants (81%) completed the study. Across the 12 months, the Constant Score increased significantly more in the exercise group, by 11 units (95% CI 5 to 17 units), compared with individual physiotherapy, and by 20 units (95% CI 14 to 26 units), compared with home exercise. The Constant Score increased significantly more in individual physiotherapy, by 10 units (95% CI 4 to 16 units), compared with home exercise. The improvement in Oxford Shoulder Score was significantly more in the exercise group than in the individual physiotherapy or home exercise groups. The improvements in the Hospital Anxiety and Disability Scale anxiety scores and range of motion were significantly greater in both physiotherapy groups than in the home exercise group. **Conclusion:** An exercise class supervised by a physiotherapist may be more effective at restoring function for patients with frozen shoulder than individual musculoskeletal physiotherapy or a home exercise program alone.

[95% CIs calculated by the CAP Editor.]

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Commentary

Frozen shoulder causes pain, physical impairments and potential anxiety.¹ Primary care clinicians should be able to recognise frozen shoulder, provide reassurance and initiate a treatment pathway that is informed by efficacy and cost. Individual physiotherapy, group physiotherapy and home exercises have different cost implications, but there have been no previous head-to-head comparisons of their efficacy for frozen shoulder.

Commendably, Russell and colleagues conducted the first randomised controlled trial of all three of these approaches. Based on a patient-reported outcome measure with a known minimal clinically important difference, group therapy was found to be statistically and clinically superior to home exercises. The Hospital Anxiety and Disability Scale anxiety scores were significantly lower in the physiotherapy groups; this possibly reflects contact with a knowledgeable therapist and fellow patients in the group. This contrasts with the likely experience of many people with frozen shoulder. Alarming, 83% of the patients referred for this study had been labelled with false-positive diagnoses. If false negatives are nearly as prevalent, then isolation, confusion and anxiety may be the norm.

While there are various systems for classifying the phases of frozen shoulder, its phasic nature is accepted by clinicians. Clinicians modify treatment accordingly,² yet researchers typically disregard this clinical wisdom with implications for applicability. Russell

and colleagues refer to the 'pain-predominant' and 'stiffness-predominant' classification.³ Loosely interpreting this, they excluded patients with symptoms of less than 3 months in order to minimise those in the 'early pain predominant phase'. This is encouraging, but it is uncertain as to how a stricter definition of stiffness-predominant (patient-reported predominance of stiffness over pain³) would influence the size and direction of effect. Also uncertain are the implications for intra-articular corticosteroid injection, which appears to be efficacious – especially when combined with physiotherapy.⁴ Future research should integrate the aspect of intra-articular injection with Russell and colleagues' important contribution.

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References

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